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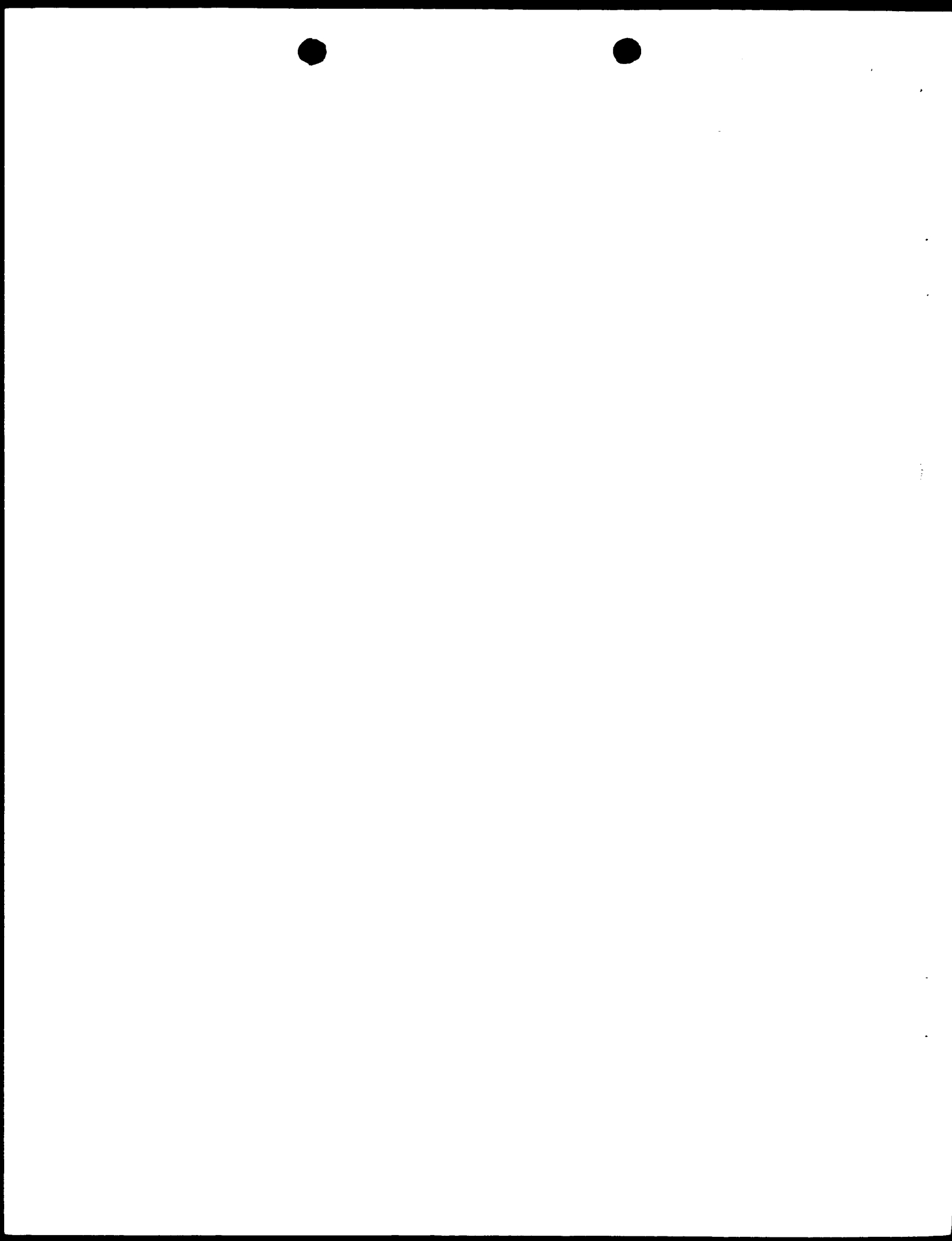
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 aag ctc aag gaa tct gag gca tta gtt gat gct tcc cca aat gaa gag 783  
 Lys Leu Lys Glu Ser Glu Ala Leu Val Asp Ala Ser Pro Asn Glu Glu  
                     145                    150                    155  
 gaa cta gta gtt gtt ggt tgt tct cgc cgc ata cct gca ggc aat gat 831  
 Glu Leu Val Val Val Gly Cys Ser Arg Arg Ile Pro Ala Gly Asn Asp  
     160                    165                    170  
 gat gtt caa ggt aaa aca gat tgt cca cca cct gca gat gca gga tca 879  
 Asp Val Gln Gly Lys Thr Asp Cys Pro Pro Pro Ala Asp Ala Gly Ser  
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 aaa agg ctg cca gtt gac gaa act agt ttg gac aag ggc act gat ttt 927



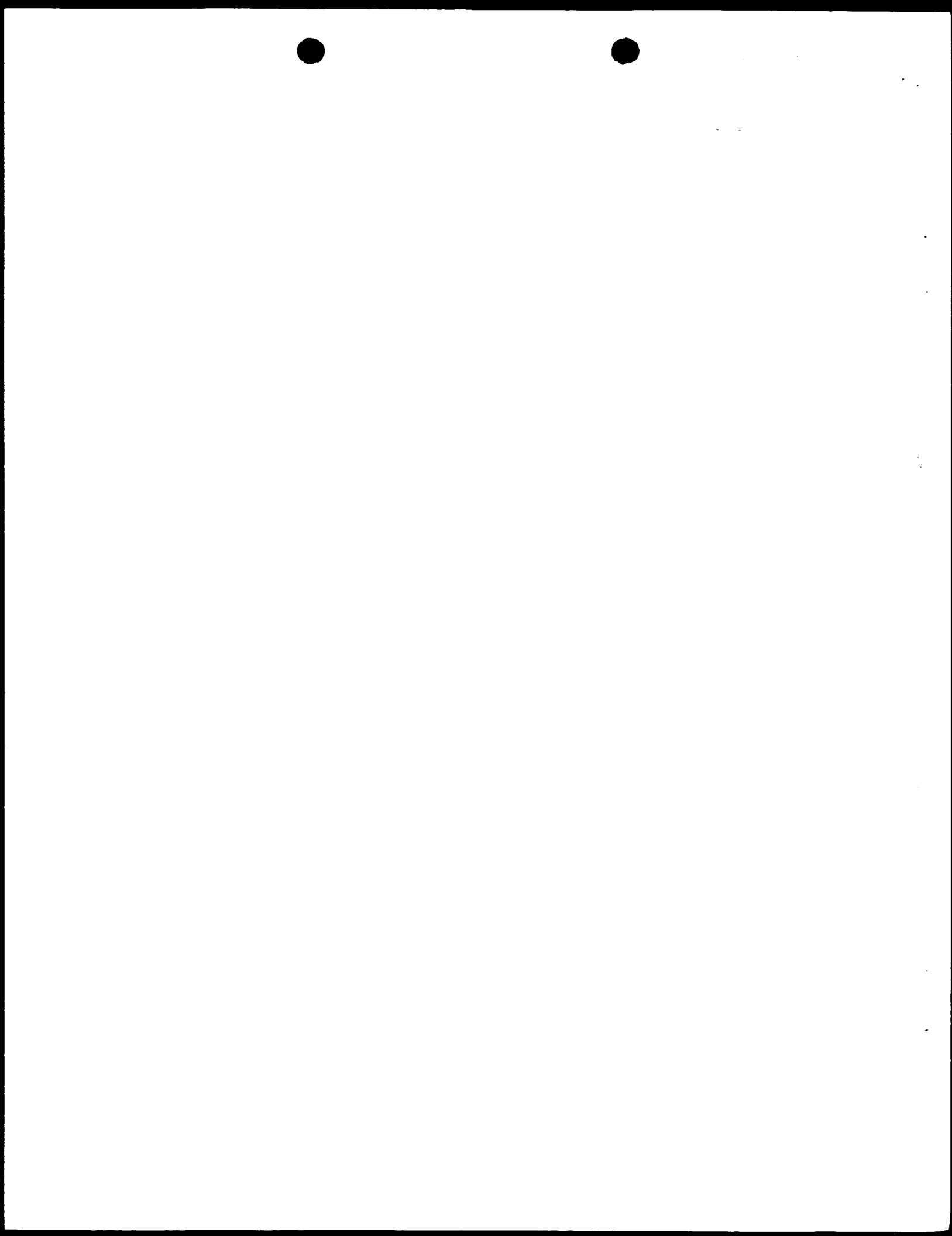
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Lys	Arg	Leu	Pro	Val	Asp	Glu	Thr	Ser	Leu	Asp	Lys	Gly	Thr	Asp	Phe	
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cct	ttg	aaa	tca	gtt	acg	gag	acc	gag	aag	ata	gtg	ctt	gat	gca	tcc	975
Pro	Leu	Lys	Ser	Val	Thr	Glu	Thr	Glu	Lys	Ile	Val	Leu	Asp	Ala	Ser	
			210					215				220				
ccc	ata	gtt	gaa	act	ggg	gat	gac	agt	gtt	ata	ggg	tca	cca	tct	gag	1023
Pro	Ile	Val	Glu	Thr	Gly	Asp	Asp	Ser	Val	Ile	Gly	Ser	Pro	Ser	Glu	
		225					230					235				
aat	tta	gag	aca	caa	aag	ctt	caa	gat	ggg	aag	aca	gat	tgt	tca	cca	1071
Asn	Leu	Glu	Thr	Gln	Lys	Leu	Gln	Asp	Gly	Lys	Thr	Asp	Cys	Ser	Pro	
	240					245					250					
cct	gca	aat	gca	gaa	tcg	aaa	acg	ctg	cca	gtt	ggg	gaa	act	agt	tta	1119
Pro	Ala	Asn	Ala	Glu	Ser	Lys	Thr	Leu	Pro	Val	Gly	Glu	Thr	Ser	Leu	
	255				260				265						270	
gaa	aaa	gaa	tat	cca	caa	aag	ttt	caa	gat	gat	aac	aca	gat	tgt	cta	1167
Glu	Lys	Glu	Tyr	Pro	Gln	Lys	Phe	Gln	Asp	Asp	Asn	Thr	Asp	Cys	Leu	
			275					280						285		
cca	cct	gca	aat	gca	gaa	tca	aaa	agg	ctg	cca	gtt	ggc	gaa	act	agt	1215
Pro	Pro	Ala	Asn	Ala	Glu	Ser	Lys	Arg	Leu	Pro	Val	Gly	Glu	Thr	Ser	
			290					295					300			
tta	gaa	aag	gac	act	gat	ttt	cct	ttg	aaa	tca	act	acg	gag	act	gga	1263
Leu	Glu	Lys	Asp	Thr	Asp	Phe	Pro	Leu	Lys	Ser	Thr	Thr	Glu	Thr	Gly	
		305					310					315				
aag	atg	gtt	ctt	tat	gca	tcc	ccc	ata	gtt	gaa	act	agg	gat	gac	agc	1311
Lys	Met	Val	Leu	Tyr	Ala	Ser	Pro	Ile	Val	Glu	Thr	Arg	Asp	Asp	Ser	
	320					325					330					
gtt	ata	tgt	tca	cca	tct	aca	aat	tta	gaa	acc	caa	aag	ctt	ctt	gtc	1359
Val	Ile	Cys	Ser	Pro	Ser	Thr	Asn	Leu	Glu	Thr	Gln	Lys	Leu	Leu	Val	
	335				340				345					350		
agt	aaa	act	ggc	tta	gaa	acc	gac	ata	gtt	ttg	cct	ttg	aaa	aga	aaa	1407
Ser	Lys	Thr	Gly	Leu	Glu	Thr	Asp	Ile	Val	Leu	Pro	Leu	Lys	Arg	Lys	
			355					360					365			
aga	gac	act	gca	gaa	att	gag	ctg	gat	gca	tgt	gct	aca	gtt	gca	aat	1455
Arg	Asp	Thr	Ala	Glu	Ile	Glu	Leu	Asp	Ala	Cys	Ala	Thr	Val	Ala	Asn	
			370					375					380			
gga	gat	gat	cac	gtt	atg	agt	tct	gat	ggg	gtc	att	cca	tct	cca	tct	1503
Gly	Asp	Asp	His	Val	Met	Ser	Ser	Asp	Gly	Val	Ile	Pro	Ser	Pro	Ser	
		385					390					395				
ggg	tgc	aaa	aat	gat	aat	cga	cct	gaa	atg	tgc	aac	acg	tgt	aaa	aaa	1551
Gly	Cys	Lys	Asn	Asp	Asn	Arg	Pro	Glu	Met	Cys	Asn	Thr	Cys	Lys	Lys	
	400					405					410					



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cgg caa aag gtc aac ggt gat tgt caa aat agg agt gtt tgc tcc tgc Arg Gln Lys Val Asn Gly Asp Cys Gln Asn Arg Ser Val Cys Ser Cys 415 420 425 430	1599
att gtc cag cca gtt gaa gaa tct gat aac gtg aca cag gat atg aaa Ile Val Gln Pro Val Glu Glu Ser Asp Asn Val Thr Gln Asp Met Lys 435 440 445	1647
gaa act gga cca gtt acg agc aga gaa tat gag gag aac ggg caa ata Glu Thr Gly Pro Val Thr Ser Arg Glu Tyr Glu Glu Asn Gly Gln Ile 450 455 460	1695
caa cat ggt aaa tca agt gat ccc aaa ttc tat tct tcg gtg tac cca Gln His Gly Lys Ser Ser Asp Pro Lys Phe Tyr Ser Ser Val Tyr Pro 465 470 475	1743
gag tat tgg gtt cct gtg cag cta tca gat gta cag ctg gag caa tac Glu Tyr Trp Val Pro Val Gln Leu Ser Asp Val Gln Leu Glu Gln Tyr 480 485 490	1791
tgt cag act ctc ttc tcc aaa tcc tta tct ctt tct tca ctt tcg aag Cys Gln Thr Leu Phe Ser Lys Ser Leu Ser Leu Ser Ser Leu Ser Lys 495 500 505 510	1839
att gat ctt gga gct cta gaa gaa act ctc aat tct gta aga aaa acc Ile Asp Leu Gly Ala Leu Glu Glu Thr Leu Asn Ser Val Arg Lys Thr 515 520 525	1887
tgt gac cat cca tac gtt atg gat gca tct ttg aaa caa ctg ctc acc Cys Asp His Pro Tyr Val Met Asp Ala Ser Leu Lys Gln Leu Leu Thr 530 535 540	1935
aag aat ctg gag ttg cat gaa atc ctg gat gta gaa att aaa gcg agc Lys Asn Leu Glu Leu His Glu Ile Leu Asp Val Glu Ile Lys Ala Ser 545 550 555	1983
ggg aaa ctt cac ctc ctt gat aaa atg ctt act cat ata aaa aag aat Gly Lys Leu His Leu Leu Asp Lys Met Leu Thr His Ile Lys Lys Asn 560 565 570	2031
ggt tta aaa gca gtt gtc ttc tac cag gca aca caa acc cct gaa ggg Gly Leu Lys Ala Val Val Phe Tyr Gln Ala Thr Gln Thr Pro Glu Gly 575 580 585 590	2079
ctt ctg ctt ggt aat att ctc gaa gat ttt gtg ggt caa aga ttt ggt Leu Leu Leu Gly Asn Ile Leu Glu Asp Phe Val Gly Gln Arg Phe Gly 595 600 605	2127
cca aaa tct tat gag cat ggg ata tat tcc tca aag aag aac tcc gct Pro Lys Ser Tyr Glu His Gly Ile Tyr Ser Ser Lys Lys Asn Ser Ala 610 615 620	2175
ata aac aat ttc aac aag gag agt caa tgc tgt gtt ctg ctg ttg gaa Ile Asn Asn Phe Asn Lys Glu Ser Gln Cys Cys Val Leu Leu Leu Glu 625 630 635	2223





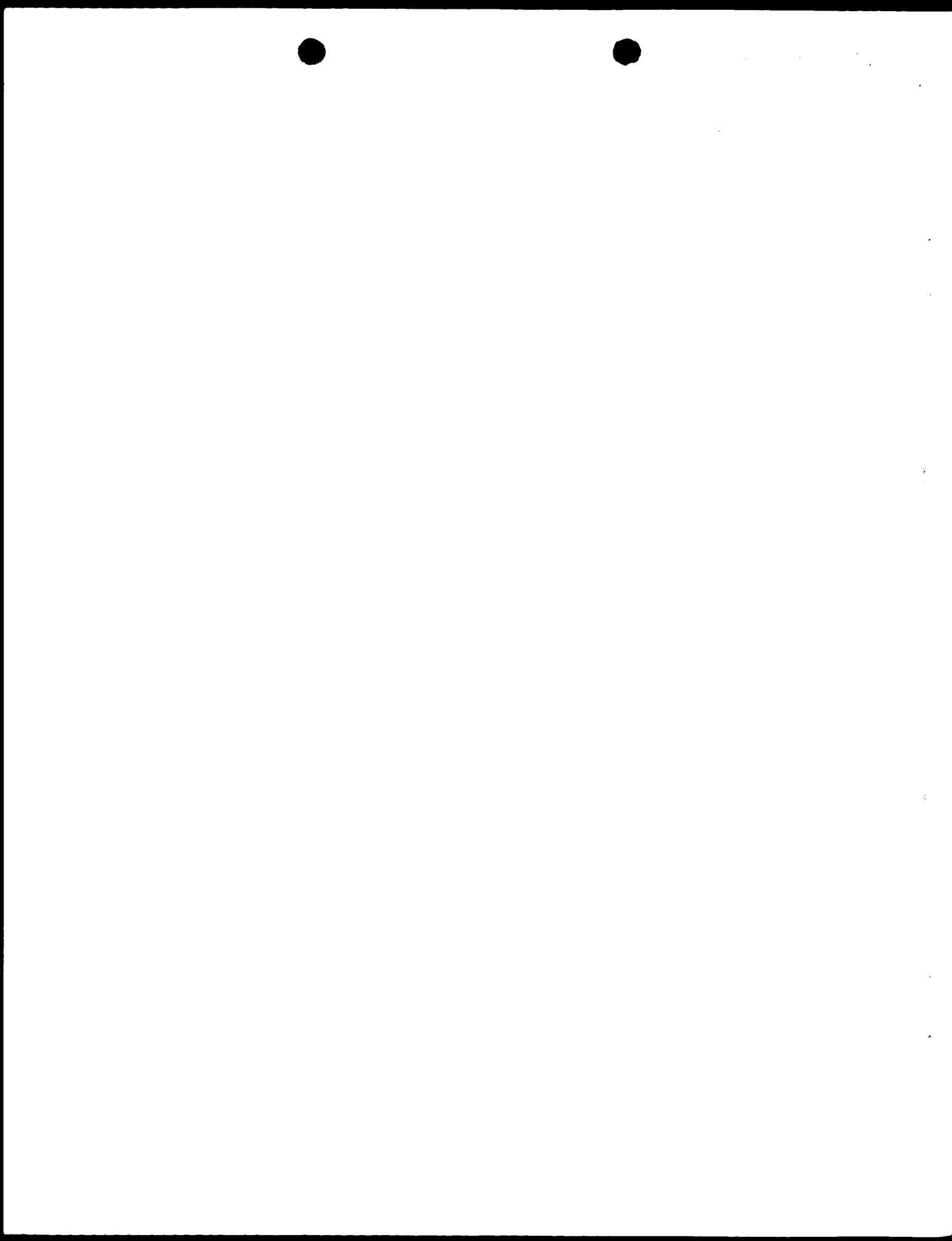
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aca cgt gcc tgc agt caa acc att aaa ctc ttg cga gct gat gcg ttt	2271
Thr Arg Ala Cys Ser Gln Thr Ile Lys Leu Leu Arg Ala Asp Ala Phe	
640 645 650	
att ctt ttt gga agc agc ttg aat cca tgc cat gat gtt aag cac gta	2319
Ile Leu Phe Gly Ser Ser Leu Asn Pro Ser His Asp Val Lys His Val	
655 660 665 670	
gag aag ata aaa atc gag tca tgt tct gaa aga act aag ata ttc cga	2367
Glu Lys Ile Lys Ile Glu Ser Cys Ser Glu Arg Thr Lys Ile Phe Arg	
675 680 685	
ttg tac tca gta tgt aca gtt gaa gaa aaa gcc ctg att ctg gct agg	2415
Leu Tyr Ser Val Cys Thr Val Glu Glu Lys Ala Leu Ile Leu Ala Arg	
690 695 700	
caa aat atg cgg caa aat aaa gct gta gag aac cta aac cgc tct ctc	2463
Gln Asn Met Arg Gln Asn Lys Ala Val Glu Asn Leu Asn Arg Ser Leu	
705 710 715	
acg cac gca ctg ctc atg tgg ggg gcg tca tac tta ttt gat aaa ctg	2511
Thr His Ala Leu Leu Met Trp Gly Ala Ser Tyr Leu Phe Asp Lys Leu	
720 725 730	
gat cat ttt cac agc agt gaa act cca gat tca gga gtt tca ttt gaa	2559
Asp His Phe His Ser Ser Glu Thr Pro Asp Ser Gly Val Ser Phe Glu	
735 740 745 750	
caa tct att atg gac ggc gtg att cat gaa ttc tgc tcc ata ctt tct	2607
Gln Ser Ile Met Asp Gly Val Ile His Glu Phe Ser Ser Ile Leu Ser	
755 760 765	
tcc aaa ggt gga gaa gaa aat gaa gtc aag ctg tgt cta ctt ttg gag	2655
Ser Lys Gly Gly Glu Glu Asn Glu Val Lys Leu Cys Leu Leu Leu Glu	
770 775 780	
gcc aag cat gct cag gga act tac agc agt gat tct act cta ttt ggt	2703
Ala Lys His Ala Gln Gly Thr Tyr Ser Ser Asp Ser Thr Leu Phe Gly	
785 790 795	
gaa gac cat att aag ttg tca gat gaa gag agt cca aat ata ttt tgg	2751
Glu Asp His Ile Lys Leu Ser Asp Glu Glu Ser Pro Asn Ile Phe Trp	
800 805 810	
tca aag ctg ttg ggg gga aaa aat cct atg tgg aaa tac cct tca gat	2799
Ser Lys Leu Leu Gly Gly Lys Asn Pro Met Trp Lys Tyr Pro Ser Asp	
815 820 825 830	
act ccc caa agg aat cga aaa cga gtt cag tat ttt gag ggt tct gaa	2847
Thr Pro Gln Arg Asn Arg Lys Arg Val Gln Tyr Phe Glu Gly Ser Glu	
835 840 845	
gcg agt ccc aaa act ggc gat ggt gga aat gca aag aag cga aag aag	2895
Ala Ser Pro Lys Thr Gly Asp Gly Gly Asn Ala Lys Lys Arg Lys Lys	



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850	855	860	
gct tct gat gat gtc act gat ccc cgg gtc act gat ccg cca gta gat			2943
Ala Ser Asp Asp Val Thr Asp Pro Arg Val Thr Asp Pro Pro Val Asp			
865	870	875	
gat gat gaa aga aag gcc tct ggg aag gat cac atg ggg gct ttg gag			2991
Asp Asp Glu Arg Lys Ala Ser Gly Lys Asp His Met Gly Ala Leu Glu			
880	885	890	
tca cca aaa gtc ata aca ctc cag tca tca tgt aaa tct tct ggt aca			3039
Ser Pro Lys Val Ile Thr Leu Gln Ser Ser Cys Lys Ser Ser Gly Thr			
895	900	905	910
gat ggt aca ttg gat gga aat gat gct ttt ggc ttg tat tct atg ggc			3087
Asp Gly Thr Leu Asp Gly Asn Asp Ala Phe Gly Leu Tyr Ser Met Gly			
915	920	925	
agc cat atc tct gga atc cca gag gat atg tta gct agt caa gat tgg			3135
Ser His Ile Ser Gly Ile Pro Glu Asp Met Leu Ala Ser Gln Asp Trp			
930	935	940	
ggg aaa ata ccg gat gaa tca cag agg agg ctc cac act gtt tta aag			3183
Gly Lys Ile Pro Asp Glu Ser Gln Arg Arg Leu His Thr Val Leu Lys			
945	950	955	
ccg aag atg gca aaa ctt tgc caa gtt ttg cat ctt tca gat gct tgc			3231
Pro Lys Met Ala Lys Leu Cys Gln Val Leu His Leu Ser Asp Ala Cys			
960	965	970	
aca agc atg gtc gga aat ttt ctc gaa tat gtt att gaa aat cac cga			3279
Thr Ser Met Val Gly Asn Phe Leu Glu Tyr Val Ile Glu Asn His Arg			
975	980	985	990
atc tac gaa gag cca gcc act act ttt cag gca ttc cag ata gcc ctg			3327
Ile Tyr Glu Glu Pro Ala Thr Thr Phe Gln Ala Phe Gln Ile Ala Leu			
995	1000	1005	
agt tgg att gca gcc ttg ttg gta aag caa att ctt agc cac aaa gaa			3375
Ser Trp Ile Ala Ala Leu Leu Val Lys Gln Ile Leu Ser His Lys Glu			
1010	1015	1020	
tct ctg gtc cgt gca aat tct gaa tta gct ttc aaa tgc tct aga gta			3423
Ser Leu Val Arg Ala Asn Ser Glu Leu Ala Phe Lys Cys Ser Arg Val			
1025	1030	1035	
gag gtg gat tat att tat tcg ata ttg tcc tgc atg aag agt ctg ttc			3471
Glu Val Asp Tyr Ile Tyr Ser Ile Leu Ser Cys Met Lys Ser Leu Phe			
1040	1045	1050	
ctg gag cat aca caa ggt ttg cag ttc gat tgc ttt ggt act aat tct			3519
Leu Glu His Thr Gln Gly Leu Gln Phe Asp Cys Phe Gly Thr Asn Ser			
1055	1060	1065	1070
aaa cag tca gtg gtt agc aca aaa cta gta aat gaa agt ctc tca ggg			3567



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Lys Gln Ser Val Val Ser Thr Lys Leu Val Asn Glu Ser Leu Ser Gly	
1075	1080 1085
gct aca gtg cgt gac gaa aag att aat acg aag tcg atg cga aat agc	3615
Ala Thr Val Arg Asp Glu Lys Ile Asn Thr Lys Ser Met Arg Asn Ser	
1090	1095 1100
tca gag gat gaa gag tgc atg act gag aag aga tgt agc cat tat agc	3663
Ser Glu Asp Glu Glu Cys Met Thr Glu Lys Arg Cys Ser His Tyr Ser	
1105	1110 1115
aca gca aca aga gat atc gaa aag act att agt ggc ata aaa aag aaa	3711
Thr Ala Thr Arg Asp Ile Glu Lys Thr Ile Ser Gly Ile Lys Lys Lys	
1120	1125 1130
tac aag aag caa gtg caa aag ctt gta caa gag cat gag gaa aag aaa	3759
Tyr Lys Lys Gln Val Gln Lys Leu Val Gln Glu His Glu Glu Lys Lys	
1135	1140 1145 1150
atg gag ctg tta aat atg tat gca gac aag aag cag aaa ctt gaa act	3807
Met Glu Leu Leu Asn Met Tyr Ala Asp Lys Lys Gln Lys Leu Glu Thr	
1155	1160 1165
agt aaa agt gtg gaa gca gca gta att cgt att acc tgt tca cgg acc	3855
Ser Lys Ser Val Glu Ala Ala Val Ile Arg Ile Thr Cys Ser Arg Thr	
1170	1175 1180
agt act caa gtg ggt gat ctc aaa ctg ctg gat cat aat tat gaa aga	3903
Ser Thr Gln Val Gly Asp Leu Lys Leu Leu Asp His Asn Tyr Glu Arg	
1185	1190 1195
aag ttt gat gaa atc aaa agt gag aaa aat gaa tgc ctc aaa agt ctg	3951
Lys Phe Asp Glu Ile Lys Ser Glu Lys Asn Glu Cys Leu Lys Ser Leu	
1200	1205 1210
gag caa atg cac gag gtt gca aag aag aag ttg gct gag gat gaa gcc	3999
Glu Gln Met His Glu Val Ala Lys Lys Lys Leu Ala Glu Asp Glu Ala	
1215	1220 1225 1230
tgt tgg att aat cgg ata aag agc tgg gca gct aaa tta aaa gtt tgt	4047
Cys Trp Ile Asn Arg Ile Lys Ser Trp Ala Ala Lys Leu Lys Val Cys	
1235	1240 1245
gtt ccc att caa agt ggc aat aac aag cat ttt agt ggt tca tca aac	4095
Val Pro Ile Gln Ser Gly Asn Asn Lys His Phe Ser Gly Ser Ser Asn	
1250	1255 1260
att tcc caa aat gct cct gat gta caa att tgc aat aat gct aac gtt	4143
Ile Ser Gln Asn Ala Pro Asp Val Gln Ile Cys Asn Asn Ala Asn Val	
1265	1270 1275
gaa gct act tac gct gat acg aat tgc atg gct tcc aag gtt aat caa	4191
Glu Ala Thr Tyr Ala Asp Thr Asn Cys Met Ala Ser Lys Val Asn Gln	
1280	1285 1290



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gtg cca gaa gca gaa aac aca tta gga acc atg tcg ggt ggc agc act	4239
Val Pro Glu Ala Glu Asn Thr Leu Gly Thr Met Ser Gly Gly Ser Thr	
1295                      1300                      1305                      1310	
caa caa gtt cat gaa atg gtg gat gta aga aat gac gag aca atg gat	4287
Gln Gln Val His Glu Met Val Asp Val Arg Asn Asp Glu Thr Met Asp	
1315                      1320                      1325	
gtc tca gct ttg tct cgt gaa cag ctt aca aag agc cag tcc aat gag	4335
Val Ser Ala Leu Ser Arg Glu Gln Leu Thr Lys Ser Gln Ser Asn Glu	
1330                      1335                      1340	
cac gct tct atc act gtg cct gag att ttg att cct gct gac tgt caa	4383
His Ala Ser Ile Thr Val Pro Glu Ile Leu Ile Pro Ala Asp Cys Gln	
1345                      1350                      1355	
gag gaa ttt gcg gcc ttg aac gtg cat ttg tca gaa gac cag aat tgt	4431
Glu Glu Phe Ala Ala Leu Asn Val His Leu Ser Glu Asp Gln Asn Cys	
1360                      1365                      1370	
gac aga ata aca tct gcg gca tca gat gaa gat gtt tca tca agg gtg	4479
Asp Arg Ile Thr Ser Ala Ala Ser Asp Glu Asp Val Ser Ser Arg Val	
1375                      1380                      1385                      1390	
cca gag gta tcc cag tca ctc gaa aat ctt tct gcc tcc ccc gag ttt	4527
Pro Glu Val Ser Gln Ser Leu Glu Asn Leu Ser Ala Ser Pro Glu Phe	
1395                      1400                      1405	
tct cta aat aga gag gag gct ttg gtt aca aca gaa aat aga aga aca	4575
Ser Leu Asn Arg Glu Glu Ala Leu Val Thr Thr Glu Asn Arg Arg Thr	
1410                      1415                      1420	
agt cat gtg ggt ttt gat act gat aac att ttg gac cag cag aat aga	4623
Ser His Val Gly Phe Asp Thr Asp Asn Ile Leu Asp Gln Gln Asn Arg	
1425                      1430                      1435	
gaa gat tgt tct ctt gac caa gag att cct gac gag tta gcg atg cct	4671
Glu Asp Cys Ser Leu Asp Gln Glu Ile Pro Asp Glu Leu Ala Met Pro	
1440                      1445                      1450	
gtg caa cat ctt gcg tct gtg gta gag act agg ggt gct gct gaa tct	4719
Val Gln His Leu Ala Ser Val Val Glu Thr Arg Gly Ala Ala Glu Ser	
1455                      1460                      1465                      1470	
gat cag tat ggt caa gat ata tgt cct atg cct tct tca ctg gct gga	4767
Asp Gln Tyr Gly Gln Asp Ile Cys Pro Met Pro Ser Ser Leu Ala Gly	
1475                      1480                      1485	
aag caa cct gac cca gca gca aac act gag agc gaa aat ctt gaa gaa	4815
Lys Gln Pro Asp Pro Ala Ala Asn Thr Glu Ser Glu Asn Leu Glu Glu	
1490                      1495                      1500	
gca att gag cct cag tct gct ggt tca gaa aca gta gag act act gat	4863
Ala Ile Glu Pro Gln Ser Ala Gly Ser Glu Thr Val Glu Thr Thr Asp	
1505                      1510                      1515	





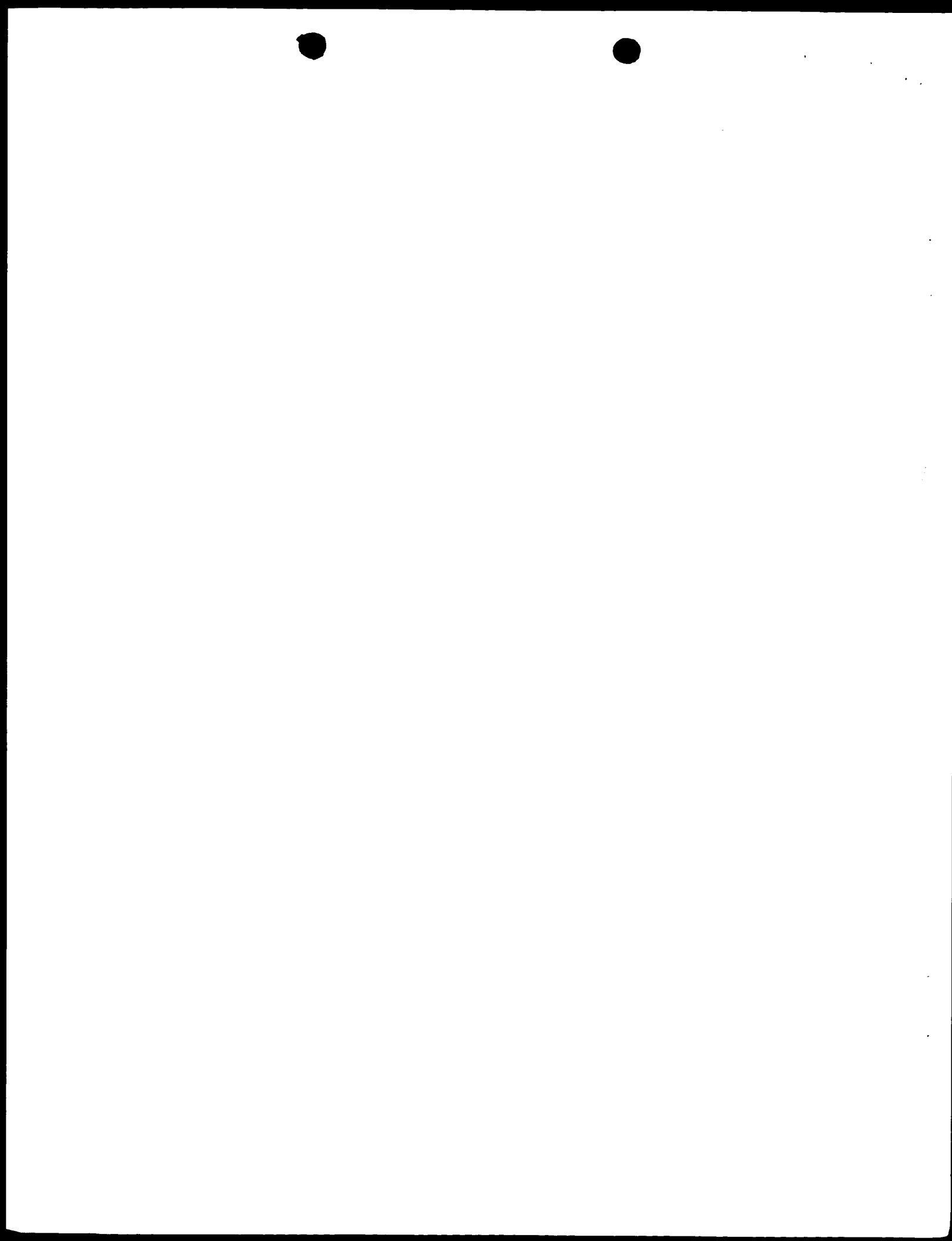
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ttt gct gca tca cat cag ggt gat caa gtt aca tgt cct ttg cta tct	4911
Phe Ala Ala Ser His Gln Gly Asp Gln Val Thr Cys Pro Leu Leu Ser	
1520 1525 1530	
tca ccg act gga aat cag cct gcg cca gaa gca aat att gaa ggc caa	4959
Ser Pro Thr Gly Asn Gln Pro Ala Pro Glu Ala Asn Ile Glu Gly Gln	
1535 1540 1545 1550	
aat atc aac aca tca gct gag ccc cat gta gcg ggt cca gat gca gta	5007
Asn Ile Asn Thr Ser Ala Glu Pro His Val Ala Gly Pro Asp Ala Val	
1555 1560 1565	
gag agt ggt gat tat gca gta ata gat cag gaa aca atg ggt gct cag	5055
Glu Ser Gly Asp Tyr Ala Val Ile Asp Gln Glu Thr Met Gly Ala Gln	
1570 1575 1580	
gat gca tgc tct ctg cca tct gga tgc gtt gga act cag tct gac cta	5103
Asp Ala Cys Ser Leu Pro Ser Gly Ser Val Gly Thr Gln Ser Asp Leu	
1585 1590 1595	
gga gca aac att gag ggt caa aat gtc aca aca gtg gct caa ctt ccc	5151
Gly Ala Asn Ile Glu Gly Gln Asn Val Thr Thr Val Ala Gln Leu Pro	
1600 1605 1610	
aca gat gga tca gat gca gtt gta acc ggt gga tct cct gta tca gat	5199
Thr Asp Gly Ser Asp Ala Val Val Thr Gly Gly Ser Pro Val Ser Asp	
1615 1620 1625 1630	
cag tgt gcc cag gat gca tct cct atg cca tta tct tgc cct gga aat	5247
Gln Cys Ala Gln Asp Ala Ser Pro Met Pro Leu Ser Ser Pro Gly Asn	
1635 1640 1645	
cac cct gat aca gca gtt aat atc gag ggt tta gat aac aca tca gta	5295
His Pro Asp Thr Ala Val Asn Ile Glu Gly Leu Asp Asn Thr Ser Val	
1650 1655 1660	
gct gag cct cat ata agt gga tca gat gca tgt gaa atg gaa att tca	5343
Ala Glu Pro His Ile Ser Gly Ser Asp Ala Cys Glu Met Glu Ile Ser	
1665 1670 1675	
gaa cct ggt ccc caa gta gag cgg tca acc ttt gca aat ctt ttc cat	5391
Glu Pro Gly Pro Gln Val Glu Arg Ser Thr Phe Ala Asn Leu Phe His	
1680 1685 1690	
gaa ggt ggc gtg gag cat tca gca ggt gta aca gct ctt gtt cca tca	5439
Glu Gly Gly Val Glu His Ser Ala Gly Val Thr Ala Leu Val Pro Ser	
1695 1700 1705 1710	
ctt ctt aac aat ggt acg gaa cag att gcc gtt caa cct gtt cct caa	5487
Leu Leu Asn Asn Gly Thr Glu Gln Ile Ala Val Gln Pro Val Pro Gln	
1715 1720 1725	
ata cct ttc cct gtg ttc aac gac ccg ttt ctg cat gaa ctg gag aag	5535
Ile Pro Phe Pro Val Phe Asn Asp Pro Phe Leu His Glu Leu Glu Lys	



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1730	1735	1740	
ttg cgg aga gaa tca gag aac tca aag aag act ttt gaa gaa aaa aaa			5583
Leu Arg Arg Glu Ser Glu Asn Ser Lys Lys Thr Phe Glu Glu Lys Lys			
1745	1750	1755	
tca atc ttg aaa gct gaa ctc gag agg aag atg gct gaa gta caa gca			5631
Ser Ile Leu Lys Ala Glu Leu Glu Arg Lys Met Ala Glu Val Gln Ala			
1760	1765	1770	
gag ttt cga aga aaa ttt cat gag gta gaa gcc gag cat aac acc aga			5679
Glu Phe Arg Arg Lys Phe His Glu Val Glu Ala Glu His Asn Thr Arg			
1775	1780	1785	1790
acg aca aag ata gag aag gat aag aat ctt gtt ata atg aac aaa ctg			5727
Thr Thr Lys Ile Glu Lys Asp Lys Asn Leu Val Ile Met Asn Lys Leu			
1795	1800	1805	
ttg gcg aat gcg ttc ttg tcc aaa tgt act gac aag aag gta tct ccc			5775
Leu Ala Asn Ala Phe Leu Ser Lys Cys Thr Asp Lys Lys Val Ser Pro			
1810	1815	1820	
tca gga gct cca agg ggt aaa att cag cag cta gca cag aga gca gca			5823
Ser Gly Ala Pro Arg Gly Lys Ile Gln Gln Leu Ala Gln Arg Ala Ala			
1825	1830	1835	
caa gtg agt gca ctg aga aat tac att gct cct cag cag ctt cag gca			5871
Gln Val Ser Ala Leu Arg Asn Tyr Ile Ala Pro Gln Gln Leu Gln Ala			
1840	1845	1850	
tct tct ttt cct gct cct gct ctg gtt tcg gct cct ctg caa ctt cag			5919
Ser Ser Phe Pro Ala Pro Ala Leu Val Ser Ala Pro Leu Gln Leu Gln			
1855	1860	1865	1870
caa tca tca ttt cct gct cct ggt ccg gct cct ctg cag cct cag gca			5967
Gln Ser Ser Phe Pro Ala Pro Gly Pro Ala Pro Leu Gln Pro Gln Ala			
1875	1880	1885	
tct tcg ttt cct tct tca gtc tct cgt cca tca gcc ctt ctt ctg aat			6015
Ser Ser Phe Pro Ser Ser Val Ser Arg Pro Ser Ala Leu Leu Leu Asn			
1890	1895	1900	
ttt gcg gtc tgt cca atg cct cag ccc aga cag cct ctc ata tcc aac			6063
Phe Ala Val Cys Pro Met Pro Gln Pro Arg Gln Pro Leu Ile Ser Asn			
1905	1910	1915	
ata gct cca act cca tca gtt act cct gca aca aat cca ggt ctg cgt			6111
Ile Ala Pro Thr Pro Ser Val Thr Pro Ala Thr Asn Pro Gly Leu Arg			
1920	1925	1930	
tct cct gca cca cac cta aac tca tat aga cca tcc tct tca act ccc			6159
Ser Pro Ala Pro His Leu Asn Ser Tyr Arg Pro Ser Ser Ser Thr Pro			
1935	1940	1945	1950
gtc gcc aca gct act cca acc tcg tca gtc cct cct caa gct ttg aca			6207



- 15 -

Val Ala Thr Ala Thr Pro Thr Ser Ser Val Pro Pro Gln Ala Leu Thr  
                   1955                                  1960                                  1965

tat tca gct gtg tca att cag cag cag caa gaa caa caa ccg caa cag 6255  
 Tyr Ser Ala Val Ser Ile Gln Gln Gln Gln Glu Gln Gln Pro Gln Gln  
                   1970                                  1975                                  1980

agc ttg agc agt gga ttg cag agc aac aat gaa gtg gtt tgt ctt tct 6303  
 Ser Leu Ser Ser Gly Leu Gln Ser Asn Asn Glu Val Val Cys Leu Ser  
                   1985                                  1990                                  1995

gac gac gag tgacctaaaga ggagagatgg ttaggggtctt agttattgat 6352  
 Asp Asp Glu  
                   2000

ttttagagag ttaataatag tatatatata tatgtataag taggttacct aatctctgtc 6412

gttaatctaa tttagttagt caggaaccga ctcgttggt aaggtctctc cttttgaaac 6472

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<212> PRT

<213> Arabidopsis thaliana

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                   20                                  25                                  30

Gly Leu Arg Arg Ser Ser Arg Gly Thr Pro Ser Thr Lys Val Ile Thr  
                   35                                  40                                  45

Pro Ala Ser Ala Thr Arg Lys Ser Glu Arg Leu Ala Pro Ser Pro Ala  
                   50                                  55                                  60

Ser Val Ser Lys Lys Ser Gly Gly Ile Val Lys Asn Ser Thr Pro Ser  
                   65                                  70                                  75                                  80

Ser Leu Arg Arg Ser Asn Arg Gly Lys Thr Glu Val Ser Leu Gln Ser  
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Ser Lys Gly Ser Asp Asn Ser Ile Arg Lys Gly Asp Thr Ser Pro Asp  
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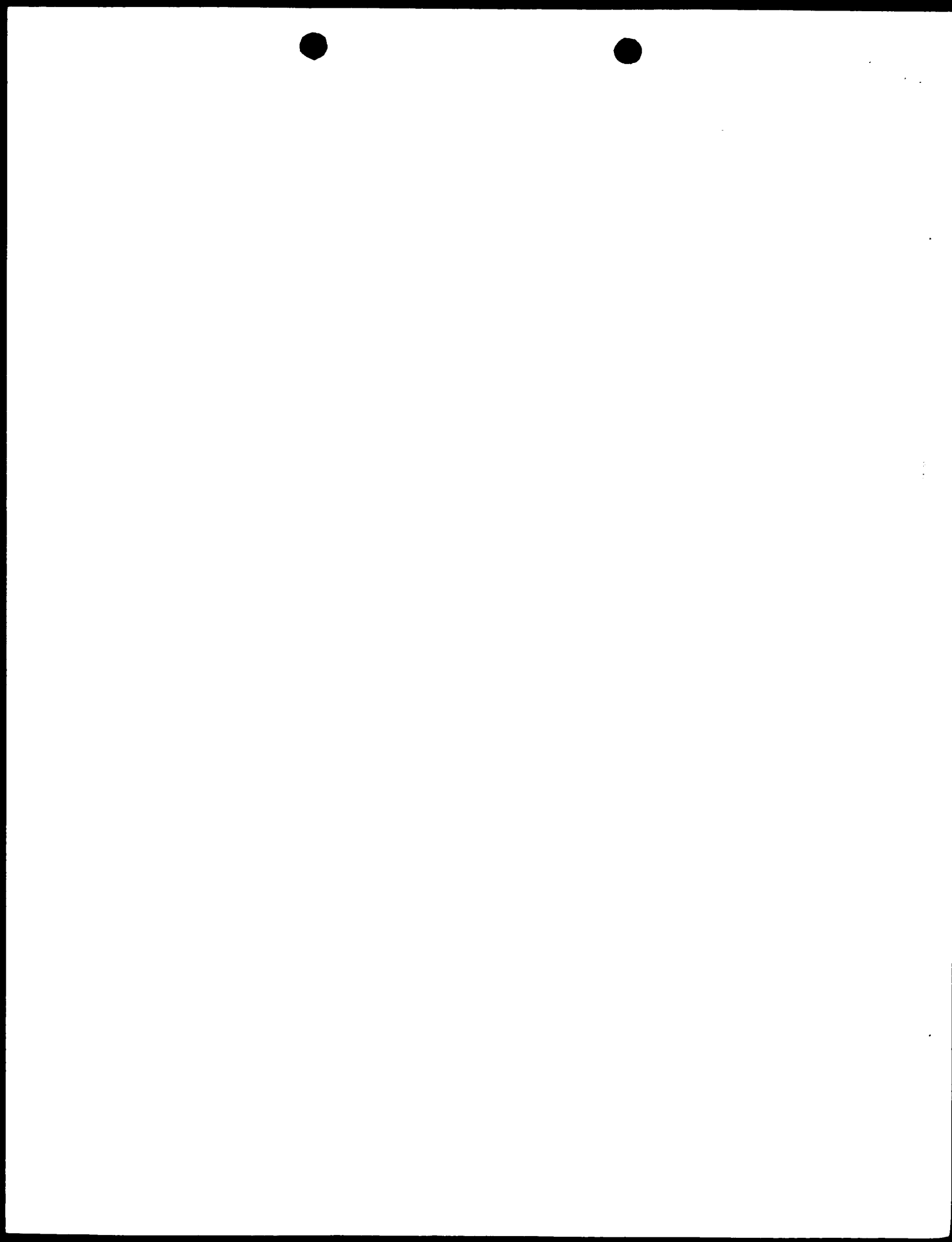
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Pro Ile Met Ser Ala Arg Ser Tyr Arg Ala Leu Phe Arg Gly Lys Leu



- 16 -

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Lys Glu Ser Glu Ala Leu Val Asp Ala Ser Pro Asn Glu Glu Glu Leu		
145	150	155 160
Val Val Val Gly Cys Ser Arg Arg Ile Pro Ala Gly Asn Asp Asp Val		
	165	170 175
Gln Gly Lys Thr Asp Cys Pro Pro Pro Ala Asp Ala Gly Ser Lys Arg		
	180	185 190
Leu Pro Val Asp Glu Thr Ser Leu Asp Lys Gly Thr Asp Phe Pro Leu		
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Lys Ser Val Thr Glu Thr Glu Lys Ile Val Leu Asp Ala Ser Pro Ile		
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	225	230 235 240
Glu Thr Gln Lys Leu Gln Asp Gly Lys Thr Asp Cys Ser Pro Pro Ala		
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Asn Ala Glu Ser Lys Thr Leu Pro Val Gly Glu Thr Ser Leu Glu Lys		
	260	265 270
Glu Tyr Pro Gln Lys Phe Gln Asp Asp Asn Thr Asp Cys Leu Pro Pro		
	275	280 285
Ala Asn Ala Glu Ser Lys Arg Leu Pro Val Gly Glu Thr Ser Leu Glu		
	290	295 300
Lys Asp Thr Asp Phe Pro Leu Lys Ser Thr Thr Glu Thr Gly Lys Met		
	305	310 315 320
Val Leu Tyr Ala Ser Pro Ile Val Glu Thr Arg Asp Asp Ser Val Ile		
	325	330 335
Cys Ser Pro Ser Thr Asn Leu Glu Thr Gln Lys Leu Leu Val Ser Lys		
	340	345 350
Thr Gly Leu Glu Thr Asp Ile Val Leu Pro Leu Lys Arg Lys Arg Asp		
	355	360 365
Thr Ala Glu Ile Glu Leu Asp Ala Cys Ala Thr Val Ala Asn Gly Asp		
	370	375 380
Asp His Val Met Ser Ser Asp Gly Val Ile Pro Ser Pro Ser Gly Cys		
	385	390 395 400
Lys Asn Asp Asn Arg Pro Glu Met Cys Asn Thr Cys Lys Lys Arg Gln		
	405	410 415
Lys Val Asn Gly Asp Cys Gln Asn Arg Ser Val Cys Ser Cys Ile Val		
	420	425 430





- 17 -

Gln Pro Val Glu Glu Ser Asp Asn Val Thr Gln Asp Met Lys Glu Thr  
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 Gly Pro Val Thr Ser Arg Glu Tyr Glu Glu Asn Gly Gln Ile Gln His  
 450 455 460  
 Gly Lys Ser Ser Asp Pro Lys Phe Tyr Ser Ser Val Tyr Pro Glu Tyr  
 465 470 475 480  
 Trp Val Pro Val Gln Leu Ser Asp Val Gln Leu Glu Gln Tyr Cys Gln  
 485 490 495  
 Thr Leu Phe Ser Lys Ser Leu Ser Leu Ser Ser Leu Ser Lys Ile Asp  
 500 505 510  
 Leu Gly Ala Leu Glu Glu Thr Leu Asn Ser Val Arg Lys Thr Cys Asp  
 515 520 525  
 His Pro Tyr Val Met Asp Ala Ser Leu Lys Gln Leu Leu Thr Lys Asn  
 530 535 540  
 Leu Glu Leu His Glu Ile Leu Asp Val Glu Ile Lys Ala Ser Gly Lys  
 545 550 555 560  
 Leu His Leu Leu Asp Lys Met Leu Thr His Ile Lys Lys Asn Gly Leu  
 565 570 575  
 Lys Ala Val Val Phe Tyr Gln Ala Thr Gln Thr Pro Glu Gly Leu Leu  
 580 585 590  
 Leu Gly Asn Ile Leu Glu Asp Phe Val Gly Gln Arg Phe Gly Pro Lys  
 595 600 605  
 Ser Tyr Glu His Gly Ile Tyr Ser Ser Lys Lys Asn Ser Ala Ile Asn  
 610 615 620  
 Asn Phe Asn Lys Glu Ser Gln Cys Cys Val Leu Leu Leu Glu Thr Arg  
 625 630 635 640  
 Ala Cys Ser Gln Thr Ile Lys Leu Leu Arg Ala Asp Ala Phe Ile Leu  
 645 650 655  
 Phe Gly Ser Ser Leu Asn Pro Ser His Asp Val Lys His Val Glu Lys  
 660 665 670  
 Ile Lys Ile Glu Ser Cys Ser Glu Arg Thr Lys Ile Phe Arg Leu Tyr  
 675 680 685  
 Ser Val Cys Thr Val Glu Glu Lys Ala Leu Ile Leu Ala Arg Gln Asn  
 690 695 700  
 Met Arg Gln Asn Lys Ala Val Glu Asn Leu Asn Arg Ser Leu Thr His  
 705 710 715 720



- 18 -

Ala Leu Leu Met Trp Gly Ala Ser Tyr Leu Phe Asp Lys Leu Asp His  
 725 730 735  
 Phe His Ser Ser Glu Thr Pro Asp Ser Gly Val Ser Phe Glu Gln Ser  
 740 745 750  
 Ile Met Asp Gly Val Ile His Glu Phe Ser Ser Ile Leu Ser Ser Lys  
 755 760 765  
 Gly Gly Glu Glu Asn Glu Val Lys Leu Cys Leu Leu Leu Glu Ala Lys  
 770 775 780  
 His Ala Gln Gly Thr Tyr Ser Ser Asp Ser Thr Leu Phe Gly Glu Asp  
 785 790 795 800  
 His Ile Lys Leu Ser Asp Glu Glu Ser Pro Asn Ile Phe Trp Ser Lys  
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 Leu Leu Gly Gly Lys Asn Pro Met Trp Lys Tyr Pro Ser Asp Thr Pro  
 820 825 830  
 Gln Arg Asn Arg Lys Arg Val Gln Tyr Phe Glu Gly Ser Glu Ala Ser  
 835 840 845  
 Pro Lys Thr Gly Asp Gly Gly Asn Ala Lys Lys Arg Lys Lys Ala Ser  
 850 855 860  
 Asp Asp Val Thr Asp Pro Arg Val Thr Asp Pro Pro Val Asp Asp Asp  
 865 870 875 880  
 Glu Arg Lys Ala Ser Gly Lys Asp His Met Gly Ala Leu Glu Ser Pro  
 885 890 895  
 Lys Val Ile Thr Leu Gln Ser Ser Cys Lys Ser Ser Gly Thr Asp Gly  
 900 905 910  
 Thr Leu Asp Gly Asn Asp Ala Phe Gly Leu Tyr Ser Met Gly Ser His  
 915 920 925  
 Ile Ser Gly Ile Pro Glu Asp Met Leu Ala Ser Gln Asp Trp Gly Lys  
 930 935 940  
 Ile Pro Asp Glu Ser Gln Arg Arg Leu His Thr Val Leu Lys Pro Lys  
 945 950 955 960  
 Met Ala Lys Leu Cys Gln Val Leu His Leu Ser Asp Ala Cys Thr Ser  
 965 970 975  
 Met Val Gly Asn Phe Leu Glu Tyr Val Ile Glu Asn His Arg Ile Tyr  
 980 985 990  
 Glu Glu Pro Ala Thr Thr Phe Gln Ala Phe Gln Ile Ala Leu Ser Trp  
 995 1000 1005  
 Ile Ala Ala Leu Leu Val Lys Gln Ile Leu Ser His Lys Glu Ser Leu



Glu Ala Glu Asn Thr Leu Gly Thr Met Ser Gly Gly Ser Thr Gln Gln  
1300 1305 1310



- 20 -

Val His Glu Met Val Asp Val Arg Asn Asp Glu Thr Met Asp Val Ser  
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 Ala Leu Ser Arg Glu Gln Leu Thr Lys Ser Gln Ser Asn Glu His Ala  
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 Ser Ile Thr Val Pro Glu Ile Leu Ile Pro Ala Asp Cys Gln Glu Glu  
 345 1350 1355 1360  
 Phe Ala Ala Leu Asn Val His Leu Ser Glu Asp Gln Asn Cys Asp Arg  
 1365 1370 1375  
 Ile Thr Ser Ala Ala Ser Asp Glu Asp Val Ser Ser Arg Val Pro Glu  
 1380 1385 1390  
 Val Ser Gln Ser Leu Glu Asn Leu Ser Ala Ser Pro Glu Phe Ser Leu  
 1395 1400 1405  
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 1410 1415 1420  
 Val Gly Phe Asp Thr Asp Asn Ile Leu Asp Gln Gln Asn Arg Glu Asp  
 425 1430 1435 1440  
 Cys Ser Leu Asp Gln Glu Ile Pro Asp Glu Leu Ala Met Pro Val Gln  
 1445 1450 1455  
 His Leu Ala Ser Val Val Glu Thr Arg Gly Ala Ala Glu Ser Asp Gln  
 1460 1465 1470  
 Tyr Gly Gln Asp Ile Cys Pro Met Pro Ser Ser Leu Ala Gly Lys Gln  
 1475 1480 1485  
 Pro Asp Pro Ala Ala Asn Thr Glu Ser Glu Asn Leu Glu Glu Ala Ile  
 1490 1495 1500  
 Glu Pro Gln Ser Ala Gly Ser Glu Thr Val Glu Thr Thr Asp Phe Ala  
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 Ala Ser His Gln Gly Asp Gln Val Thr Cys Pro Leu Leu Ser Ser Pro  
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 1555 1560 1565  
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 1570 1575 1580  
 Cys Ser Leu Pro Ser Gly Ser Val Gly Thr Gln Ser Asp Leu Gly Ala  
 585 1590 1595 1600





- 21 -

Asn Ile Glu Gly Gln Asn Val Thr Thr Val Ala Gln Leu Pro Thr Asp  
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 Gly Ser Asp Ala Val Val Thr Gly Gly Ser Pro Val Ser Asp Gln Cys  
 1620 1625 1630  
 Ala Gln Asp Ala Ser Pro Met Pro Leu Ser Ser Pro Gly Asn His Pro  
 1635 1640 1645  
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 1650 1655 1660  
 Pro His Ile Ser Gly Ser Asp Ala Cys Glu Met Glu Ile Ser Glu Pro  
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 1685 1690 1695  
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 745 1750 1755 1760  
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 1765 1770 1775  
 Arg Arg Lys Phe His Glu Val Glu Ala Glu His Asn Thr Arg Thr Thr  
 1780 1785 1790  
 Lys Ile Glu Lys Asp Lys Asn Leu Val Ile Met Asn Lys Leu Leu Ala  
 1795 1800 1805  
 Asn Ala Phe Leu Ser Lys Cys Thr Asp Lys Lys Val Ser Pro Ser Gly  
 1810 1815 1820  
 Ala Pro Arg Gly Lys Ile Gln Gln Leu Ala Gln Arg Ala Ala Gln Val  
 825 1830 1835 1840  
 Ser Ala Leu Arg Asn Tyr Ile Ala Pro Gln Gln Leu Gln Ala Ser Ser  
 1845 1850 1855  
 Phe Pro Ala Pro Ala Leu Val Ser Ala Pro Leu Gln Leu Gln Gln Ser  
 1860 1865 1870  
 Ser Phe Pro Ala Pro Gly Pro Ala Pro Leu Gln Pro Gln Ala Ser Ser  
 1875 1880 1885  
 Phe Pro Ser Ser Val Ser Arg Pro Ser Ala Leu Leu Leu Asn Phe Ala



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1890	1895	1900
Val Cys Pro Met Pro Gln Pro Arg Gln Pro Leu Ile Ser Asn Ile Ala 905	1910	1915 1920
Pro Thr Pro Ser Val Thr Pro Ala Thr Asn Pro Gly Leu Arg Ser Pro 1925	1930	1935
Ala Pro His Leu Asn Ser Tyr Arg Pro Ser Ser Ser Thr Pro Val Ala 1940	1945	1950
Thr Ala Thr Pro Thr Ser Ser Val Pro Pro Gln Ala Leu Thr Tyr Ser 1955	1960	1965
Ala Val Ser Ile Gln Gln Gln Gln Glu Gln Gln Pro Gln Gln Ser Leu 1970	1975	1980
Ser Ser Gly Leu Gln Ser Asn Asn Glu Val Val Cys Leu Ser Asp Asp 985	1990	1995 2000
Glu		

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16

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&lt;211&gt; 16

&lt;212&gt; DNA

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## Oligonucleotide

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- 25 -

ctgtacatac tgagtacaat cgga

24

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&lt;213&gt; Artificial Sequence

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- 26 -

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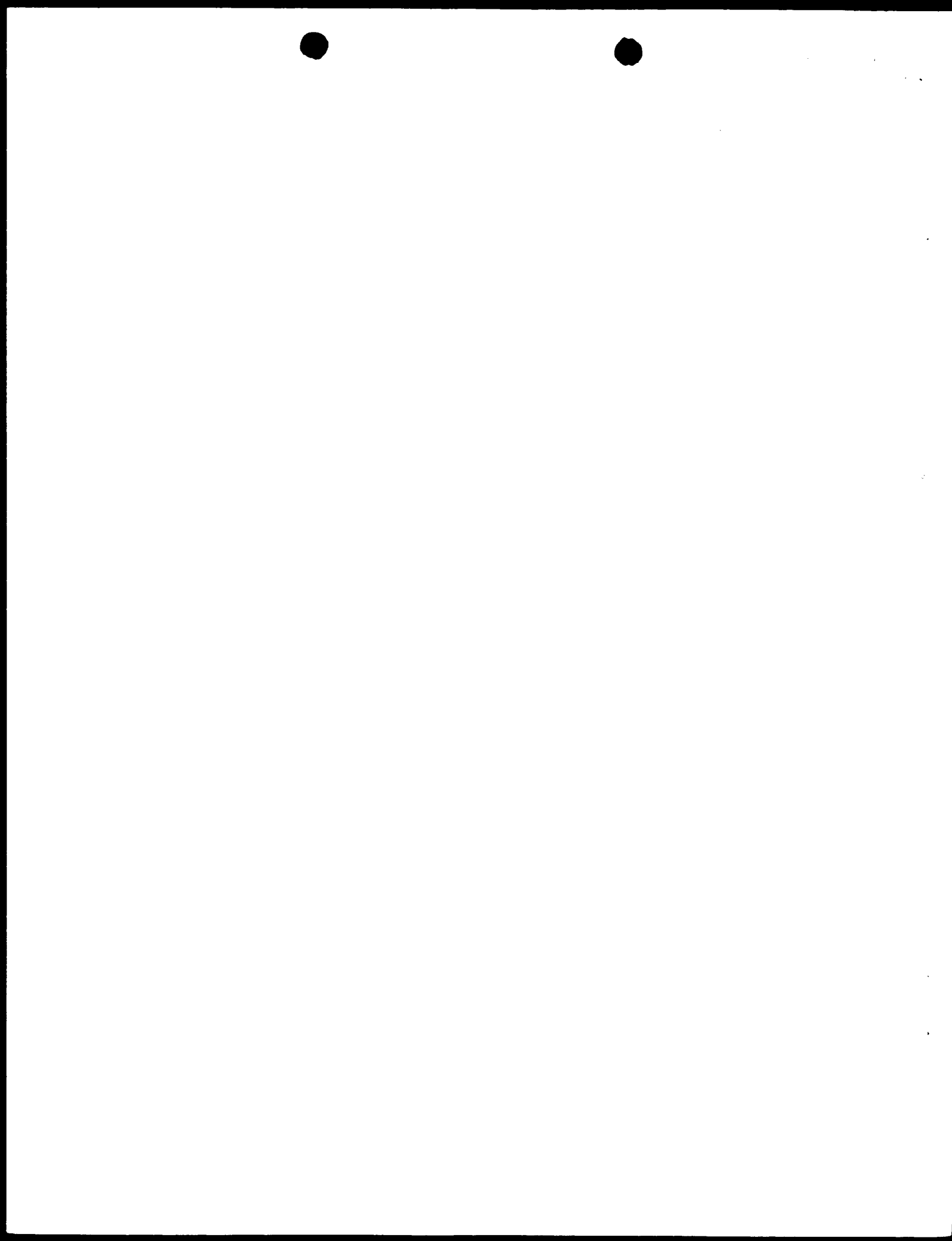
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- 27 -

&lt;213&gt; Artificial Sequence

&lt;220&gt;

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&lt;213&gt; Artificial Sequence

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&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

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25

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&lt;212&gt; DNA

&lt;213&gt; Brassica oleracea

&lt;220&gt;

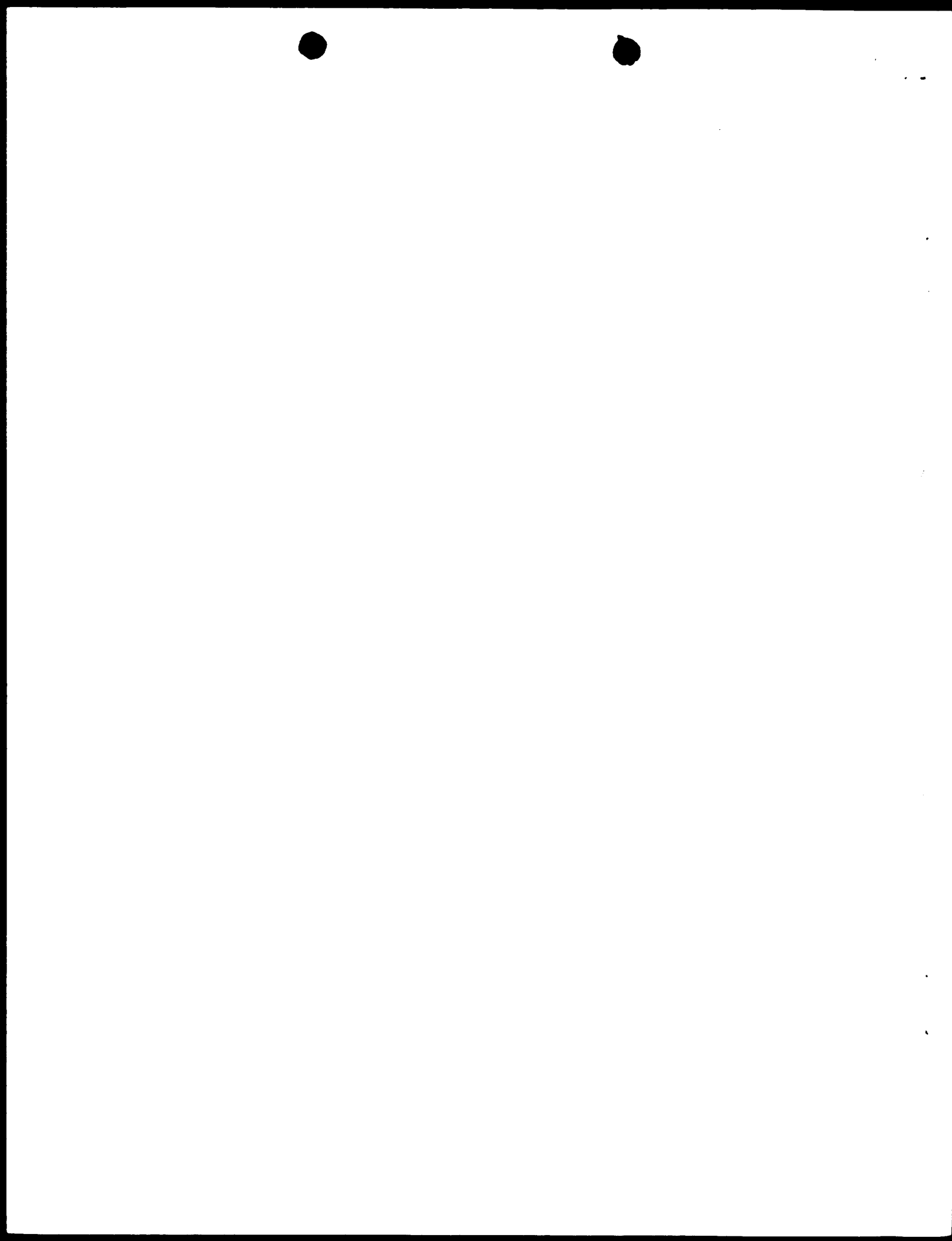
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- 28 -

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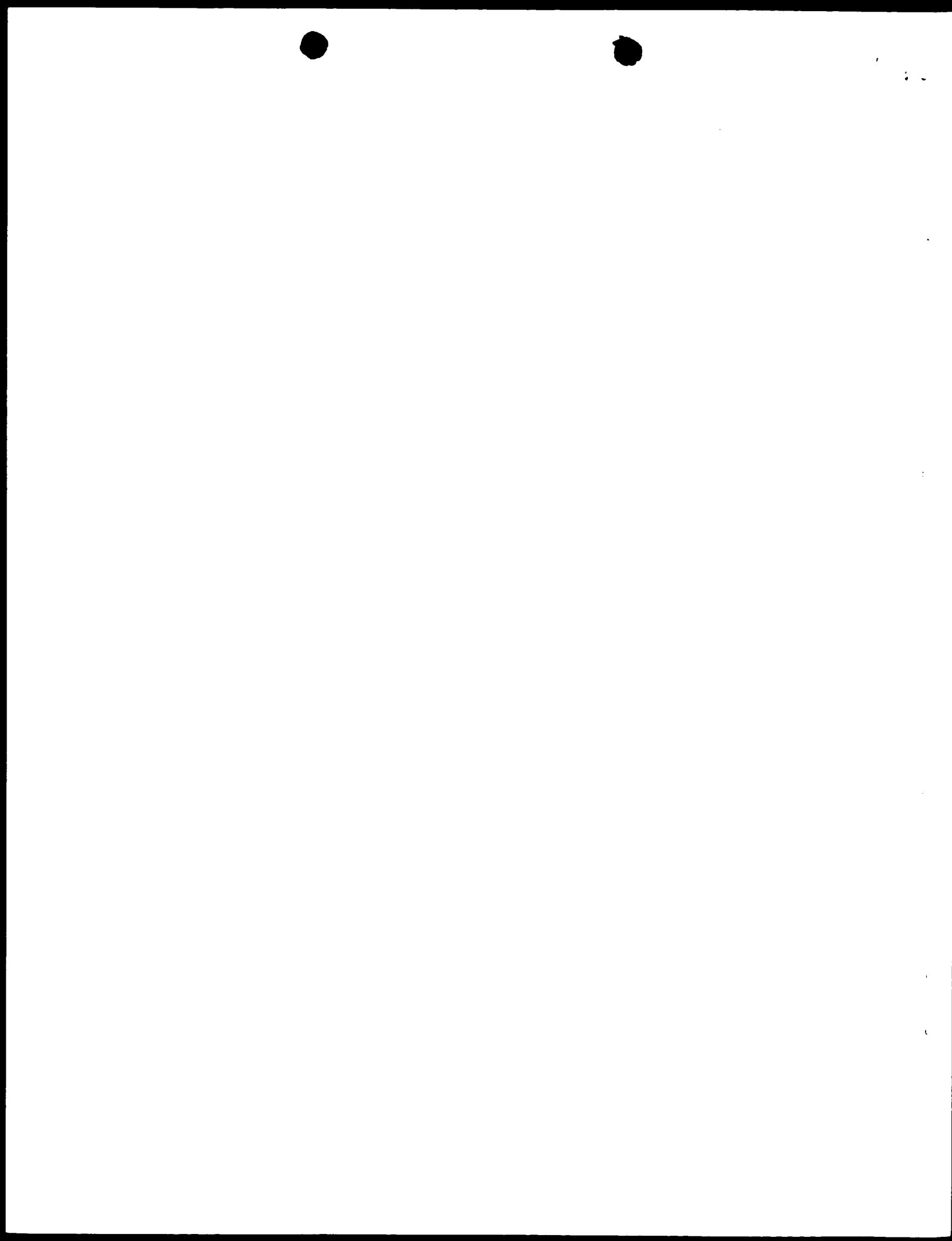
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- 29 -

tgttgtgttg

490

&lt;210&gt; 30

&lt;211&gt; 515

&lt;212&gt; DNA

&lt;213&gt; Brassica oleracea

&lt;220&gt;

&lt;223&gt; 2-33

&lt;400&gt; 30

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&lt;210&gt; 31

&lt;211&gt; 574

&lt;212&gt; DNA

&lt;213&gt; Brassica oleracea

&lt;220&gt;

&lt;223&gt; seq2-37

&lt;400&gt; 31

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&lt;210&gt; 32

&lt;211&gt; 466

&lt;212&gt; DNA

&lt;213&gt; Brassica oleracea

&lt;220&gt;

&lt;223&gt; seq2-53

&lt;400&gt; 32

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- 30 -

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&lt;210&gt; 33

&lt;211&gt; 417

&lt;212&gt; DNA

&lt;213&gt; Brassica oleracea

&lt;220&gt;

&lt;223&gt; seq2-57

&lt;400&gt; 33

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2.

